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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/673,953	12/21/2000	Atsushi Ito	Q60755	8878

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Sughrue Mion Zinn
Macpeak & Seas
Suite 800
2100 Pennsylvania Avenue NW
Washington, DC 20037-3213

EXAMINER
PATEL, PARESH H

ART UNIT	PAPER NUMBER
2829	

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/673,953	Applicant(s) ITO ET AL.	
	Examiner Paresh Patel	Art Unit 2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 July 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 December 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

The drawings are objected to because on page 6 of the drawing "(b)" should read –Fig. 9 (b)-, on page 7 "(b)", "(c)" and "(d)" should read –Fig. 10 (b)-, -Fig. 10 (c) and –Fig. 10 (d) respectively, and on page 8 "(f)" and "(g)" should read –Fig. 11 (f)- and –Fig. 11 (g)-. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 9, 10, 12, 14, 16 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 2 and 12, relation between ceramic substrate and at least one conductor layer is not clear.

Claims 9, 10, 14, 16 and 19 are rejected because they depend from rejected claims.

For the purpose of Examination it is assumed that ceramic substrate ***having or compose*** at least one conductor layer.

Claim Objections

Claim 19 is objected to because of the following informalities: it should be depend from claim 18. For the purpose of Examiner it is assumed that claim 19 is depend from claim 18.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (f) he did not himself invent the subject matter sought to be patented.

Claims 1-4, 6-16 and 18-20 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter.

Regarding claims 1-2 and 11-12, Niwa (US 6475606) in claim 1 discloses: a wafer prober [see apparatus for semiconductor manufacture and inspection] comprises a ceramic substrate [ceramic board] and a conductor layer [a conductor layer] formed on the surface thereof, wherein said ceramic substrate is composed of at least one selected from the group consisting of nitride ceramics, carbide ceramics and oxide ceramics [see nitride ceramic].

Regarding claims 3-4, 9-10, 13-14 and 15-16, Niwa in claim 2 discloses: a temperature control means is a heating element [ceramic heater].

Regarding claims 6 and 18, Niwa in fig. 6 discloses: channels are formed in ceramic substrate [47].

Regarding claims 7 and 19, Niwa in fig. 6 discloses: said ceramic substrate are provided with air suction holes [48].

Regarding claims 8 and 20, Niwa discloses: a conductor material is composed of porous material [see lines 21-24 of column 8].

Because inventions are similar and have same assignee, Examiner is requesting clarification of the contribution of Niwa to this application. Also point out who is the real inventor and if there are differences between the inventions, what those differences are exactly.

Claims 1-2 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi et al. (JP 63-047382).

Regarding claims 1-2 and 11-12, Yamaguchi et al. (hereinafter Yamaguchi) discloses: a wafer prober (wiring board of Abstract) comprises a ceramic substrate [ceramic board of Abstract] and a conductor layer [electric conductor of Abstract] formed on the surface thereof, wherein said ceramic substrate is composed of at least one selected from the group consisting of nitride ceramics [nitride ceramic of Abstract], carbide ceramics and oxide ceramics.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-4 and 9-16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2 of U.S. Patent No. 6475606. Although the conflicting claims are not identical, they are not patentably distinct from each other because: ceramic substrate is same as ceramic board of cited patent; wafer prober is same as apparatus for semiconductor manufacture and inspection; and a temperature control means (a heating element) is same as ceramic heater of cited patent.

Claims 5-8 and 17-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1-2 of U.S. Patent No. 6475606 to Niwa in view of Zehnpfenning et al. (US 4385434) and IBM Technical Disclosure Bulletin (hereinafter IBM '403). In combination with Niwa, Zehnpfenning et al. and IBM '403 discloses all the limitation of claims 4-7 and 17-20.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Niwa as applied to claims 1 and 11 above, and further in view of Zehnpfenning et al. (US 4385434).

Regarding claims 5 and 17, Niwa do not disclose a ceramic substrate is equipped with a Peltier device. Instead, Niwa uses heating element 49 for controlling the temperature of ceramic substrate. Zehnpfenning et al. in fig. 10-11 (hereafter Zeh' 434) discloses a Peltier device [lines 26-44 of column 6] embedded in a truss structure 80c of platen 12c [a support for wafer W]. It would have been obvious to include a ceramic substrate of Niwa with the Peltier device as taught by of Zeh' 434, in order to control the temperature of wafer supporting substrate by applying heating and cooling during testing.

Claims 3-6, 8-10, 13-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi as applied to claims 1 and 11 above, and further in view of IBM Technical Disclosure Bulletin, August 1989, US (TDB-ACC-NO: NB8908403).

Regarding claims 3-4, 9-10 and 13-16, Yamaguchi **in the Abstract** do not disclose a temperature control means is a heating element. IBM Technical Disclosure Bulletin (hereinafter IBM '403) discloses: a temperature control means is a heating

element [inherent to lines 40-47 of page 4 and lines 29-37 of page 5]. It would have been obvious to a person having ordinary skill in the art to include heating element to control the thermal stress of ceramic substrate during process of testing the chip or manufacturing the board.

Regarding claim 6 and 18, Yamaguchi **in the Abstract** do not disclose channels are formed in ceramic substrate. IBM '403 discloses the channels [38] formed in the substrate [lines 1-10 of page 2 and fig. 2F].

Regarding claims 8 and 20, IBM '403 discloses: said conductor layer is composed of porous material [14 or 40].

Regarding claim 5 and 17, Yamaguchi **in the Abstract** and IBM '403 do not disclose ceramic substrate is equipped with a Peltier device. However, IBM '403 discloses an issue of thermal stress [see lines 40-42 of page 4] and heat dissipation from chip [see lines 29-39 of page 5]. The Peltier device is well known in the art [see US Pat. 4385434; 3037064; and 3037065] to provide heating and cooling the chuck or the wafer to which it is embedded, in order to control the thermal expansion of chuck or wafer.

Claims 7 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi and IBM '403 as applied to claims 6, 1 and 18, 11 above, and further in view of Zehnpfenning et al. (US 4385434).

Regarding claims 7 and 19, Yamaguchi **in the Abstract** and IBM '403 do not disclose said channels formed on the surface of ceramic substrate are provided with air suction holes. Zehnpfenning et al. (hereinafter Zehnpfenning) inherently discloses the

air suction holes [lines 60-64 of column 2, wherein the wafer is mounted on the platen 12 using vacuum requires air suction holes in platen [12]. It would have been obvious to modify the ceramic substrate of Yamaguchi and IBM '403 to include air suction holes as taught by Zehnpfenning, in order to hold the chip or the wafer on the ceramic substrate during testing.

Claims 3-10 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi as applied to claims 1 and 11 above, and further in view of Tsujide et al. (US 5532610).

Regarding claims 3-4, 9-10 and 13-16, Yamaguchi **in the Abstract** do not disclose a temperature control means is a heating element. Tsujide et al. (hereinafter Tsujide) discloses: a temperature control means is a heating element [31 and heater or cooler of fig. 2]. It would have been obvious to a person having ordinary skill in the art to use heating element of Tsujide with ceramic substrate of Yamaguchi to control the thermal stress of ceramic substrate during process of testing the chip or manufacturing the board.

Regarding claim 6 and 18, Yamaguchi **in the Abstract** do not disclose channels are formed in ceramic substrate. Tsujide discloses the channels [lines 32-52 of column 5] formed in the substrate [2].

Regarding claims 8 and 20, Tsujide discloses: said conductor layer is composed of porous material [an anisotropic conductive layer].

Regarding claim 5 and 17, Yamaguchi **in the Abstract** and Tsujide do not disclose ceramic substrate is equipped with a Peltier device. However, Tsujide discloses a device [31] for providing a thermal stress with the substrate or wafer [see heater and cooler of fig. 2]. The Peltier device is well known in the art [see US Pat. 4385434; 3037064; and 3037065] to provide heating and cooling the chuck or the wafer to which it is embedded, in order to control the thermal expansion of chuck or wafer.

Regarding claims 7 and 19, Yamaguchi **in the Abstract** do not disclose said channels formed on the surface of ceramic substrate are provided with air suction holes. Tsujide discloses the air suction holes [15] on wafer supporting stage [14]. It would have been obvious to modify the ceramic substrate of Yamaguchi to include air suction holes as taught by Tsujide , in order to hold the chip or the wafer on the ceramic substrate during testing.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paresh Patel whose telephone number is 703-306-5859. The examiner can normally be reached on M-F (8:30 to 4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 703-308-1233. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Paresh Patel
March 7, 2003

KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800